

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A method, comprising:
 - identifying text to convert to speech;
 - selecting a speech style sheet from a set of available speech style sheets, said speech style sheet defining desired speech characteristics for a first voice style associated with a first voice-type, wherein said selected speech style sheet defines pronunciation rules for a speech category and wherein another speech style sheet from said set of available speech style sheets defines pronunciation rules for another speech category said speech style sheet further defining speech characteristics for a second voice style associated with the first voice-type, speech characteristics for the first voice style associated with a second voice-type, and speech characteristics for the second voice style associated with the second voice-type;
 - marking said text to associate said text with said selected speech style sheet; and
 - converting said text to speech having said desired speech characteristics by applying a low level markup generated by said speech style sheet.
2. (original) A method according to claim 1, further comprising:
 - sending said text with said low level markup to an output device.
3. (original) A method according to claim 1, further comprising:
 - identifying at least one low level markup;
 - defining a voice style at least in part by associating said voice style with said at least one low level markup; and
 - associating a speech style sheet with said voice style.
4. (original) A method according to claim 3, wherein said associating said speech style sheet with said voice style includes:
 - creating said speech style sheet.

5. (original) A method according to claim 3, wherein said associating said speech style sheet with said voice style includes:
editing said speech style sheet.
6. (original) A method according to claim 1, wherein said low level markup defines at least one of a pitch, a prosody, a voice quality, a duration, a tremor, a timbre, a speed, an intonation, a timing, a volume, and a pronunciation rule.
7. (original) A method according to claim 1, further comprising:
providing said speech style sheet to at least one of a text-to-speech developer and a text-to-speech device.
8. (original) A method according to claim 1, further comprising:
compiling a library of speech style sheets.
9. (original) A method according to claim 1, further comprising:
identifying at least one low level markup;
associating a speech style sheet with said at least one low level markup.
10. (original) A method according to claim 1, wherein said speech style sheet is selected from a menu of available speech style sheets.
11. (original) A method according to claim 1, wherein said marking of said text includes annotating said text with an annotation such as underlining, bolding, italicizing, highlighting, color-coding, coding, adding a symbol, a mark, or a design.
12. (original) A method according to claim 1, wherein said converting said text to speech includes:
identifying said low level markup associated with said speech style sheet; and
converting said marking of said text to said low level markup.

13. (original) A method according to claim 1, wherein said marking of said text further associates said text with a voice style associated with said speech style sheet.

14. (original) A method according to claim 13, wherein said voice style represents at least one of an age, an educational level, an emotion, a feeling, a physical trait, a personality trait, and a speech category.

15. (original) A method according to claim 1, wherein said low level markup allows a text-to-speech developer to convey a certain amount of information using less text.

16. (original) A method according to claim 1, wherein said selecting is performed by a text-to-speech developer not having expertise in voice arts.

17. (currently amended) A speech style sheet, comprising:

speech characteristics for at least one voice style associated with at least one voice-type, said at least one voice style relating a high level markup of said voice-type to a low level markup of said voice-type, ~~said at least one voice style including a voice style representing a voice of a particular gender speaking in a language with an accent, said at least one voice style further including a voice style representing a voice of said particular gender speaking in said language with another accent~~ said speech characteristics for at least one voice style associated with said at least one voice-type including: speech characteristics for a first voice style associated with a first voice-type, speech characteristics for a second voice style associated with the first voice-type, speech characteristics for the first voice style associated with the second voice-type, and speech characteristics for the second voice style associated with the second voice-type.

18. (original) The speech style sheet according to claim 17, wherein said high level markup of said voice-type is a text markup.

19. (original) The speech style sheet according to claim 17, wherein said high level markup includes at least one of an underlining, a bolding, an italicizing, a highlighting, a color-coding, an annotation, a coding, and an application of at least one of a symbol, a mark, and a design.

20. (original) The speech style sheet according to claim 17, wherein said low level markup of said voice-type includes code causing generation of speech having particular speech properties.
21. (original) The speech style sheet according to claim 17, wherein said low level markup defines at least one of a pitch, a prosody, a voice quality, a duration, a tremor, a timbre, a speed, an intonation, a timing, a volume, and a pronunciation rule.
22. (original) The speech style sheet according to claim 17, wherein said at least one voice style represents style characteristics such as an age, an educational level, an emotion, a feeling, a physical trait, a personality trait, and a speech category.
23. (original) The speech style sheet according to claim 17, wherein said speech style sheet is at least one of a programming object, a programming module, a computer program, or a computer file.
24. (currently amended) An apparatus, comprising:
a processor having access to at least one speech style sheet, said at least one speech style sheet containing a definition of a first voice style associated with a first voice-type, and said definition relating a high level markup of said first voice-type to a low level markup of said first voice-type, wherein said processor is operative to convert said high level markup to said low level markup, ~~wherein said at least one speech style sheet includes a speech style sheet that defines pronunciation rules for a speech category and wherein said at least one speech style sheet includes another speech style sheet that defines pronunciation rules for another speech category~~ the at least one speech style sheet further containing a definition of a second voice style associated with the first voice-type, a definition of the first voice style associated with the second voice-type, and a definition of the second voice style associated with the second voice-type;
a user interface device for applying said at least one voice style to text associated with said voice-type, said user interface being in communication with said processor; and
an output device connected to said processor for converting said text with said low level markup to speech.

25. (original) The apparatus of claim 24, wherein said processor includes at least one of a text-to-speech engine and a text normalizer.

26. (original) The apparatus according to claim 24, wherein said low level markup defines at least one of a pitch, a prosody, a voice quality, a duration, a tremor, a timbre, a speed, an intonation, a timing, a volume, and a pronunciation rule.

27. (original) The apparatus according to claim 24, wherein said high level markup includes at least one of an underlining, a bolding, an italicizing, a highlighting, a color-coding, an annotation, a coding, and an application of at least one of a symbol, a mark, and a design.

28. (currently amended) The apparatus according to claim 24, wherein said first voice style represents at least one of an age, an educational level, an emotion, a feeling, a physical trait, a personality trait, and a speech category.

29. (currently amended) A system, comprising:

a designer device for creating speech style sheets;

a speech style sheet at least partially created by said designer device, said speech style sheet defining speech characteristics for a first voice style ~~representing a voice of particular gender speaking in a language with an accent, said speech style sheet further defining a second voice style representing a voice of said particular gender speaking in said language with another accent~~ associated with a first voice-type, speech characteristics for a second voice style associated with the first voice-type, speech characteristics for the first voice style associated with the second voice-type, and speech characteristics for the second voice style associated with the second voice-type;

a text-to-speech device for receiving text associated with ~~a~~ the first voice-type, said text having a high level markup associated with said first voice style, said text-to-speech device having access to said speech style sheet and also having:

a memory for storing computer executable code; and

a processor for executing the program code stored in memory, wherein the program code includes;

code to determine, by accessing said speech style sheet, a low level markup associated with said high level markup; and

code to convert said high level markup of said text to said low level markup; and

an output device for producing expressive speech using said text with said low level markup, said output device in communication with said text-to-speech device.

30. (original) The system according to claim 29, further comprising:

a developer device in communication with said text-to-speech device, said developer device for marking text and providing said text to said text-to-speech device.

31. (original) The system according to claim 29, further comprising:

a user interface device in communication with said text-to-speech device, said user interface device for applying high level markup to text and providing said text to said text-to-speech device.

32. (currently amended) An article of manufacture, comprising:

a computer usable medium having computer readable program code means embodied therein for producing expressive text-to-speech, comprising:

computer readable program code means for identifying text to convert to speech;

computer readable program code means for selecting a speech style sheet from a set of available speech style sheets, said speech style sheet defining desired speech characteristics for a first voice style associated with a first voice-type, wherein said selected speech style sheet defines pronunciation rules for a speech category and wherein another speech style sheet from said set of available speech style sheets defines pronunciation rules for another speech category said speech style sheet further defining speech characteristics for a second voice style associated with the first voice-type, speech characteristics for the first voice style associated with a second voice-type, and speech characteristics for the second voice style associated with the second voice-type;

computer readable program code means for marking said text to associate said text with said selected speech style sheet; and

computer readable program code means for converting said text to speech having said desired speech characteristics by applying a low level markup associated with said speech style sheet.

33. (currently amended) A system for producing expressive text-to-speech, comprising:
means for identifying text to convert to speech;

means for selecting a speech style sheet from a set of available speech style sheets, said speech style sheet defining desired speech characteristics for a first voice style associated with a first voice-type, wherein said selected speech style sheet defines pronunciation rules for a speech category and wherein another speech style sheet from said set of available speech style sheets defines pronunciation rules for another speech category said speech style sheet further defining speech characteristics for a second voice style associated with the first voice-type, speech characteristics for the first voice style associated with a second voice-type, and speech characteristics for the second voice style associated with the second voice-type;

means for marking said text to associate said text with said selected speech style sheet;
and

means for converting said text to speech having said desired speech characteristics by applying a low level markup associated with said speech style sheet.

34. (previously presented) The method according to claim 1, wherein said selected speech style sheet defines pronunciation rules for at least one of aviation, chemistry and real estate.

35. (previously presented) The method according to claim 1, wherein said selected speech style sheet defines pronunciation rules for an automated flight reservation system.

36. (previously presented) The speech style sheet according to claim 17, wherein said language is English.

37. (previously presented) The speech style sheet according to claim 17, wherein said particular gender is male, said language is common English, said accent is a southern U.S. accent and said another accent is a Cornish accent.

38. cancelled

39. cancelled

40. cancelled

41. (new) The method according to claim 1, wherein said selected speech style sheet defines pronunciation rules for a speech category and wherein another speech style sheet from said set of available speech style sheets defines pronunciation rules for another speech category.

42. (new) The speech style sheet according to claim 17, wherein said first voice-type represents a voice of a particular gender speaking in a language with an accent, and wherein said second voice-type represents a voice of said particular gender speaking in said language with another accent.

43. (new) The method according to claim 1, wherein:

said first voice style represents at least one of an age, an educational level, an emotion, a feeling, a physical trait, a personality trait;

said second voice style represents at least one of an age, an educational level, an emotion, a feeling, a physical trait, a personality trait;

said first voice-type represents a voice speaking in a language; and

said second voice-type represents a voice speaking in a language.